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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/524,227	03/13/2000	Irene T. Spitsberg	13DV13004	6813
30952	7590	07/26/2004	EXAMINER	
HARTMAN AND HARTMAN, P.C. 552 EAST 700 NORTH VAIPARAISO, IN 46383			MARKHAM, WESLEY D	
			ART UNIT	PAPER NUMBER
			1762	
DATE MAILED: 07/26/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Advisory Action**

Application No.

09/524,227

Applicant(s)

SPITSBERG, IRENE T.

Examiner

Wesley D Markham

Art Unit

1762

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 05 July 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

**PERIOD FOR REPLY** [check either a) or b)]

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.  
b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on \_\_\_\_\_. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.  
2. ☐ The proposed amendment(s) will not be entered because:  
(a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);  
(b) ☐ they raise the issue of new matter (see Note below);  
(c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or  
(d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_

3. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.  
4. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).  
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: see attached Office Action.  
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.  
7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☐ will not be entered or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: \_\_\_\_\_

Claim(s) objected to: \_\_\_\_\_

Claim(s) rejected: 1-20.

Claim(s) withdrawn from consideration: \_\_\_\_\_

8. ☐ The drawing correction filed on \_\_\_\_\_ is a) ☐ approved or b) ☐ disapproved by the Examiner.  
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_.  
10. ☐ Other: \_\_\_\_\_

  
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**DETAILED ACTION / ADVISORY ACTION**

1. Acknowledgement is made of the applicant's request for reconsideration filed on 7/5/2004. Claims 1 – 20 remain pending in U.S. Application Serial No. 09/524,227, and an advisory action follows.

***Response to Arguments***

2. Applicant's arguments filed on 7/5/2004 have been fully considered but they are not persuasive.
3. A summary of the applicant's arguments follows. To begin, the applicant states that the claimed invention is directed to a process of improving the spallation resistance of a TBC coating by modifying the grain structure of a diffusion aluminide bond coat on which the TBC is deposited. The applicant states that, in this type of TBC-system, the TBC spalls as a result of cracks within an alumina scale that grows on the bond coat and/or at the interface between the bond coat and alumina scale, not as a result of cracks propagating through the diffusion aluminide bond coat. The applicant argues that all of the benefits ascribed to Nakamura's teachings concern improving the thermal fatigue resistance, reducing crack propagation speed, and increasing the peel-off resistance of a diffusion aluminide coating, and such problems do not exist in the AAPA's TBC system (e.g., because TBC spallation on a diffusion aluminide bond coat is due to a fatigue mechanism that is not the result of crack propagation through the bond coat or its grain boundaries). Therefore, the applicant argues that there is no motivation to apply Nakamura's teachings to the AAPA's TBC system,

and it would be totally unexpected that recrystallization of the bond coat could have anything to do with TBC life.

4. The examiner has carefully considered the aforementioned arguments, but they are not convincing for the following reasons. The crux of the applicant's argument is that Nakamura's teachings concern improving the properties of a diffusion aluminide coating, and the problems associated with a diffusion aluminide coating do not exist in the AAPA's TBC system because the TBC system does not fail due to a failure of the diffusion aluminide bond coat. In response, this argument (i.e., that the problems associated with a diffusion aluminide coating do not exist in the AAPA's TBC system) appears to be based on speculation on the part of the applicant and is not supported by evidence of record. The applicant's TBC system, as claimed and disclosed, comprises a diffusion aluminide bond coat. As such, one of ordinary skill in the art would have reasonably expected that problems (e.g., peeling-off, thermal fatigue, cracking and crack propagation, etc.) typically associated with diffusion aluminide coatings would be extremely relevant to diffusion aluminide bond coat-based TBC systems, such as that of the AAPA. As admitted by the applicant, Nakamura's teachings concern improving the thermal fatigue resistance, reducing crack propagation speed, and increasing the peel-off resistance of a diffusion aluminide coating. Since the TBC system of the AAPA comprises such a diffusion aluminide coating, one of ordinary skill in the art would have been highly motivated to apply Nakamura's teachings to the AAPA's TBC system. Additionally, the examiner notes that the applicant's position and argument that, in the TBC-system of

the AAPA, the TBC spalls as a result of cracks within an alumina scale that grows on the bond coat and/or at the interface between the bond coat and alumina scale, not as a result of cracks propagating through the diffusion aluminide bond coat, does not appear to be entirely accurate. In the sentence bridging pages 2 and 3 of the applicant's specification, the applicant states that, "...TBC deposited on diffusion aluminide bond coats typically spall at the alumina-to-bond coat interface or within the alumina layer itself". This statement clearly indicates that, in some cases, the TBC deposited on diffusion aluminide bond coats spalls at other locations. As such, one of ordinary skill in the art would have looked to improve the properties of each layer / coating in the TBC system of the AAPA to reduce the chances that failure would occur at any point in the system. Since Nakamura's teachings concern improving the thermal fatigue resistance, reducing crack propagation speed, and increasing the peel-off resistance of a diffusion aluminide coating, and a diffusion aluminide coating is part of the TBC system of the AAPA, one of ordinary skill in the art would clearly have been motivated to perform the process of Nakamura in conjunction with the TBC system of the AAPA in order to improve the properties of the diffusion aluminide bond coating and the TBC system as a whole. To conclude, please note that the fact that applicant has recognized another advantage (e.g., that recrystallizing a diffusion aluminide bond coat reduces failure due to cracks within an alumina scale that grows on the bond coat and/or at the interface between the bond coat and alumina scale) which would flow naturally from following the suggestion of the prior art (i.e., recrystallizing a diffusion aluminide coating to reduce failure due to

Art Unit: 1762

cracks within the aluminide coating itself, as taught by Nakamura) cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter., 1985).

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wesley D Markham whose telephone number is (571) 272-1422. The examiner can normally be reached on Monday - Friday, 8:00 AM to 4:30 PM.

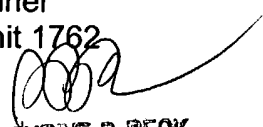
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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WDM

Wesley D Markham  
Examiner  
Art Unit 1762

  
SHRIVE P. BECK  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700